REMARKS/ARGUMENTS

This Amendment is responsive to the Office Action mailed on December 23, 2003. Entry of this Amendment is requested.

Prior to this Amendment, claims 1-4 were canceled and claims 5-9 were subject to examination. In this Amendment, claims 5-9 are not amended, and claims 10-14 are added. Support for new claims 10-14 can be found in the specification, drawings, and claims as originally filed. No new matter is added.

Initially, Applicants note that in Applicants' Amendment filed on August 16, 2003, claims 5-6 were inadvertently indicated as being canceled in the listing of claims section, even though claims 5-6 were presented for examination. As noted in the Remarks in the August 15, 2003 Amendment, Applicants intended to indicate that claims 1-4 were canceled and that claims 5-9 were pending. In the Office Action, the Examiner acknowledges that claims 5-9 are pending and subject to examination in the Office Action. Accordingly, Applicants presume that the pending claims are claims 5-14. If this is incorrect, the Examiner is requested to contact the undersigned.

Claims 5-6 and 8-9 are rejected as obvious over Williams et al. (U.S. Patent No. 6,307,755) and Temple et al. (U.S. Patent No. 5,103,290). According to the Examiner:

> Williams et al. fail to: ... b) teach a copper clip being on the backside of the die such that the copper clip strip couples the drain regions of the bumped die and the lead rail.

To supplement this deficiency, the Examiner refers to the prior art embodiments discussed in Williams et al. Specifically, the Examiner states:

> Williams et al. teach the prior art configuration (Fig. 19F-H) where a copper strap/clip having a V-shape/U-shape bend/groove (see 460 in Fig. 19H) is attached to a second/back side of a die (462 in Fig. 19H) using an epoxy (Col. 18, line 66) such that the copper strap/clip couples the respective connection region of the die and a section/rail of the lead frame (see 461/470 in Fig. 19H; Col. 18, lines 56-65).
>
> ...

> It would have been obvious to a person of ordinary skill in the art at the time [that the] invention was made to incorporate [the] die being bumped and having solder bump connections and the copper clip being attached on the backside of the die connecting the drain regions and lead rail as taught by the embodiments in Williams et al. and Temple et al. so that mechanical stress can be reduced and electrical performance, bonding strength and an alignment of the leads/die can be improved in [Williams et al.'s] device.

This rejection is traversed.

Obviousness has not been established, since one skilled in the art would not have been motivated to have modified the prior art in the manner proposed by the Examiner, and because the alleged motivation is not suggested by the cited prior art. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). As noted by the capitalized header in MPEP section 2143.01, "The prior art must suggest the desirability of the claimed invention." (emphasis added.). Also, as indicated by the Court of Appeals for the Federal Circuit, in order to establish obviousness, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991). As shown by, for example, the cover figure of the Williams et al. patent, Williams et al.'s invention embodiments appear to include a one-piece top leadframe 502 and a one-piece bottom leadframe 500. The Examiner appears to allege that one would have been motivated to have modified the one piece leadframe with, for example, the prior art two-piece construction (reference numbers 460 and 470) shown, for example, in Figure 19H of Williams et al "so that mechanical stress can be reduced and electrical performance, bonding strength and an alignment of the leads/die can be improved".

Contrary to the Examiner's allegation, modifying Williams et al.'s one piece leadframe to be a two-piece leadframe would not improve alignment problems, stress, bonding strength, or conductivity, but would result in increased alignment problems, increased stress, decreased bonding strength, and decreased conductivity. As indicated at col. 18, lines 50-57 and

col. 19, lines 1-8 of Williams et al., the alignment of the various components in the prior art packages shown in FIGS. 19F-H is "crucial" and Williams et al. describes the alignment of such prior art components "especially problematic" (see c. 19, l. 35). Modifying Williams et al.'s invention embodiments with the disclosed prior art embodiments would have made alignment problems more of a concern and problem, and not less as alleged by the Examiner. Moreover, relative to Williams et al.'s one-piece leadframe, modifying Williams et al.'s one-piece leadframe so that it is a two-piece leadframe coupled together with an adhesive epoxy would have resulted in decreased conductivity, less structural integrity, and increased stress. The one-piece construction has better conductivity, better structural integrity, and less stress than the two-piece construction, since the one piece leadframe contains only one material, while a two-piece construction contains at least two materials. In the two-piece construction, concerns such as bondability between different materials, differences in thermal expansion, etc. are present where they are not present when a one-piece construction is used. Accordingly, contrary to the Examiner's allegation, there is no motivation to modify Williams et al.'s invention embodiments with the prior art embodiments shown in FIGS. 19F-H "so that mechanical stress can be reduced and electrical performance, bonding strength and an alignment of the leads/die can be improved".

Williams et al. not only does not teach or suggest the embodiments suggested by the Examiner, Williams et al. actually "teaches away" from the modification proposed by the Examiner. As noted by col. 19, line 35 of Williams et al., Williams et al. describes the embodiments in FIGS. 19F-H as being "especially problematic". There is no motivation to modify embodiments that are not problematic with prior art embodiments that are problematic. Accordingly, the rejection based on Williams et al. is improper, and obviousness has not been established.

Lastly, as noted above, in order to establish obviousness, the prior art must suggest the motivation to modify teachings from the prior art. Should the Examiner continue to rely on the motivation provided above, the Examiner is requested to provide a column and line number where the alleged motivation "so that mechanical stress can be reduced and electrical

performance, bonding strength and an alignment of the leads/die can be improved" can be found in the prior art so that Applicants can properly address the rejection.

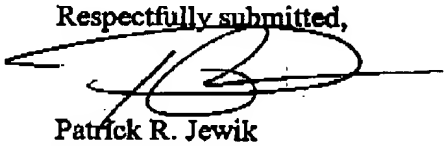
Claim 7 is rejected as obvious over Williams et al., Temple et al., and Kalfus, et al. This rejection is traversed.

Applicants submit that the combination of Williams et al. and Temple et al. is deficient for the reasons provided above, and that the additional citation of Kalfus et al. fails to remedy the deficiencies noted above.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



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